

**From:** Eric Gass [REDACTED]@oneplus.com>  
**Sent:** Fri, 27 Mar 2020 19:49:34 +0000 (UTC)  
**To:** Trevor Stone [REDACTED]@epicgames.com>  
**Cc:** Hans Stolfus [REDACTED]@epicgames.com>  
**Subject:** Re: Update

Hi Trevor,  
 Thank you very much for this summary. Definitely helpful.

Look forward to discussing the proposal sent over earlier when you are available.

Best,

Eric  
**Eric Gass**  
 [REDACTED]



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On Mar 27, 2020, at 2:58 PM, Trevor Stone [REDACTED]@epicgames.com> wrote:

Hey Eric,  
 This is our summary we put together to hopefully help address some of the questions outlined.

The Epic Games app has security measures in place to do our best to ensure all of our player's security to the best of our abilities. Some of the key things being done inside of the Epic Games app to benefit player's security can be found below.

General:

- The Epic Games app only asks for a limited number of permissions with the only runtime permissions needed being android.permission.REQUEST\_INSTALL\_PACKAGES and android.permission.REQUEST\_DELETE\_PACKAGES
- No initial installs are done without a direct user interaction of clicking an install button
- The APK is protected by security software that checks for code and resource tampering, debugger detection, ensures the app is signed with the signatures, and provides obfuscation
- All network requests are done through https
- All storage is handled in private storage
- Internal auditing from infosec teams
- Required updates - players are required to be on the most up to date version of the Epic Games app to use it
- All installs and storage leverages the standard Android security model of sandboxing and signature checking

For communicating with OnePlus:

- The Epic Games App APK uses the OnePlus owned permission : oneplus.permission.SILENT\_INSTALL
- No external intents or broadcasts can trigger the call to the OnePlus installer (blocking using EGA as a proxy)
- Before triggering install we validate there is an intent receiver via PackageManager (packageName : com.android.settings, className : com.oneplus.settings.packageinstaller.InstallService)
- We send a file provider to the apk file we want installed
- The file provider ONLY grants the FLAG\_GRANT\_READ\_URI\_PERMISSION permission
- The apk file provider is a provider for a file in the private storage of the Epic Games App

For Downloading the APK:

- Before any download we request from our trusted service metadata containing fingerprints of package signatures
- This metadata check is done internally before we install any apk, ensuring it is signed correctly and is from the correct source (Epic)
- The APK is always stored in our apps private storage - so no other app has access to it.

On Thu, Mar 26, 2020 at 7:14 PM Eric Gass [REDACTED]@oneplus.com> wrote:

Hi Trevor,  
 Thank you and agreed. Following up tomorrow if feasible would be great.

We are targeting to respond to Google with all information tomorrow, including information on the whitelisting solution.

Best,

Eric  
**Eric Gass**  
 [REDACTED]



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On Mar 26, 2020, at 5:01 PM, Trevor Stone [REDACTED]@epicgames.com> wrote:

Hey Eric,  
 Thanks for reaching out. Due to the obvious sensitivity of this situation and the responses we want to make sure we have the best possible answers to provide. We plan to follow up tomorrow or Monday to make sure we have sufficient time to cover all of the bases. Does that timeline work for you?

Additionally, if you haven't yet, a document from your side explaining the whitelisting solution you all implemented would also be important.

-Trevor

**EXHIBIT 812**

On Thu, Mar 26, 2020 at 4:29 PM Eric Gass [REDACTED]@oneplus.com> wrote:

One further follow-up point to the last email - we have been asked specifically:  
 "How are you ensuring the APK delivered by Epic Games has no security issues?"

Best,

Eric

**Eric Gass**  
 [REDACTED]  
 [REDACTED]



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On Mar 26, 2020, at 3:54 PM, Eric Gass [REDACTED]@oneplus.com> wrote:

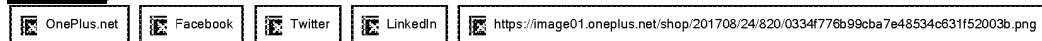
Hi Hans and Trevor,  
 For the continued discussion with Google, it would be most helpful to demonstrate where possible that our co-created Epic Games app solution is secure.  
 Everything we can demonstrate here will help further drive the possibility for approval.

Could you provide information related to the security of the Epic Games app and custom APK development for OnePlus devices?

Best,

Eric

**Eric Gass**  
 [REDACTED]  
 [REDACTED]



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On Mar 26, 2020, at 1:50 AM, Eric Gass [REDACTED]@oneplus.com> wrote:

Hi Hans and Trevor,  
 Thank you for the time today.

We are continuing the Google conversation on Game Space, with target to have this escalated into conversation between Pete Lau and Hiroshi Lockheimer by early next week. From feedback so far, a couple things may help us:

- 1) Epic Games is preloaded into a OnePlus app, and our partnership stands behind the security of the app and optimized user experience
- 2) our partnership showcases the most successful game of all time, at an all new level of 90FPS on Android first
- 3) all new devices are 5G capable, and this partnership creates great opportunity to showcase world class 5G gaming on Android

Will keep you posted with any updates.

Best,

Eric

**Eric Gass**  
 [REDACTED]  
 [REDACTED]



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On Mar 25, 2020, at 1:51 PM, Eric Gass [REDACTED]@oneplus.com> wrote:

Thanks Hans.  
 Forwarding here to make sure everyone has the attachments. I will setup a call for 3:30pm now.

Best,

Eric

**Eric Gass**  
 [REDACTED]  
 [REDACTED]



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Begin forwarded message:

**From:** Eric Gass [REDACTED]@oneplus.com>  
**Subject:** Re: Update  
**Date:** March 25, 2020 at 1:28:37 PM EDT

To: Hans Stolfus [REDACTED]@epicgames.com>

Hi Hans,  
Please see the attached, hopefully these can go through.

The first Powerpoint is the current install flow, as shown in the recording attached here.

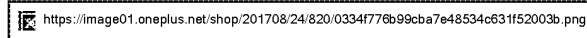
The second Powerpoint is based on the first install flow, and proposes a slightly adjusted install flow that we think could make the experience of trusting of unknown sources better from the user journey. Team is working to build this as an option for future software updates to further improve the experience.

Best,

Eric

**Eric Gass**

[REDACTED]



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Click to Download

OnePlus x Epic Games Game Space Install Flow.mp4  
7.8 MB

Click to Download  
OnePlus x Epic Games Game Space Current Install Flow 03252020.pptx  
6.7 MB

Click to Download  
OnePlus x Epic Games Game Space Install Flow Proposal 03252020.pptx  
7.4 MB

On Mar 25, 2020, at 1:03 PM, Hans Stolfus [REDACTED]@epicgames.com> wrote:

Eric,

Do you mind reattaching the ppt and screen recording? Nothing came through.

Hans

On Wed, Mar 25, 2020 at 12:45 PM Eric Gass [REDACTED]@oneplus.com> wrote:

Hi Hans,

Thanks for the questions. Please see below.

#### OnePlus 8 Series NA, EU

Google is blocking the OOB preinstall solution within Game Space on our new OnePlus 8 Series devices for North America and Europe. This means the install flow experience is now as shown here in the PowerPoint and attached screen recording.

Once the user completes the trust of unknown sources step, they will not have to trust unknown sources again during future Epic Games app updates. Only if the user deletes the Epic Games app, or factory reset their device, would they again encounter the trust unknown sources step.

Over the air updates will not be blocked.

#### OnePlus 8 Series India, Legacy Devices

The India 8 Series devices and all legacy devices (OnePlus 5, 5T, 6, 6T, 7, 7 Pro, 7T, 7T Pro) will be able to have the full preinstall solution updated through OTA without issue from Google. We target to have this ready and out on all devices through the end of May updates.

#### Other Install Discussions

The situation for previously discussed install concerns does not change. In summary here and as Rajesh shared in email:

- 1) If user chooses to uninstall the Epic Games within Game Space: Trevor has suggested Epic could provide an updated Epic Games app APK, whereby the app would hide the Epic Games app icon in the case of the preload, but if the user deletes the Epic Games app preload and then goes to the Epic Games website to download the Epic Games Android app, it would then not be hidden, and appear in the app tray. This solution could be implemented on OnePlus devices in the next software update scheduled for late May.
- 2) If user hides Game Space and then goes to download the Epic Games app from Epic Games website: we have a solution already to have the Epic Games app appear on the home screen, if a user hides Game Space.

#### Current Software Situation

All of the above described is currently ready and set to be on OnePlus 8 Series devices out of box, and other devices following the OnePlus 8 Series launch.

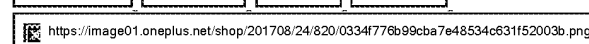
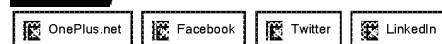
Are you available to discuss this afternoon?

Best,

Eric

**Eric Gass**

[REDACTED]



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On Mar 25, 2020, at 9:02 AM, Hans Stolfus [REDACTED]@epicgames.com> wrote:

Eric,

Question before we get on the phone. Is Google only blocking the OOB preinstall solution within Game Space? Or the ability to push the update over the air as well?

Also- just so I have clarity when speaking with Trevor, have all of our install concerns otherwise been resolved? Per last week's call: reinstalling EGA through Game Space and reassigning the app icon to desktop when Game Space is hidden?

Hans

On Wed, Mar 25, 2020 at 2:25 AM Eric Gass <[REDACTED]@oneplus.com> wrote:

Hey Hans,  
Update here. I have been on several calls with teams at HQ, and wanted to update you first thing.

Apparently at the final stage-gate of software testing before MP release. Google is blocking our Game Space silent install solution bypass of the step trusting unknown sources. We are doing everything possible to try to solve this, but currently do not foresee a quick solution to solving Google. Due to the timing, this will now likely create a situation of delaying our originally scheduled Game Space update to be on all OnePlus 8 devices out of box.

If you have time in the morning, I can update you on call with the latest on the situation, and potential paths forward. Thanks.

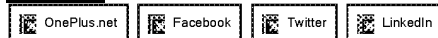
Best,


Eric

**Eric Gass**

[REDACTED]

[REDACTED]



 <https://image01.oneplus.net/shop/201708/24/820/0334f776b99cba7e48534c631f52003b.png>

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